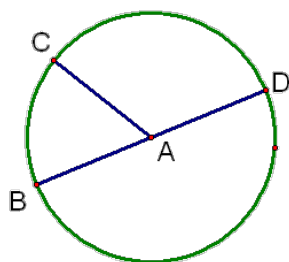


8-7 Circumference and Area of Circles



Circle--set of all points in a plane that are the same distance from a given point (center)



Radius--distance from center to a point on the circle



Diameter--distance across circle



Circumference--distance around circle

$$C = 2\pi r \quad \text{or} \quad \pi d$$

$$A = \pi r^2$$

$$d = 2r$$

$$r = 3 \quad d = 6 \quad A = 9\pi \quad C = 6\pi$$

$$r = 7 \quad d = 14 \quad A = 49\pi \quad C = 14\pi$$

$$r = 4 \quad d = 8 \quad A = 16\pi \quad C = 8\pi$$

$$r = 2.5 \quad d = 5 \quad A = 6.25\pi \quad C = 5\pi$$

$$r = 5 \quad d = 10 \quad A = 25\pi \quad C = 10\pi$$

$$r = \frac{7}{2} \quad d = 7 \quad A = \frac{49}{4}\pi \quad C = 7\pi$$

$$r = 5.85 \quad d = 11.7 \quad A = 342\pi \quad C = 36.7$$

$$r = 5 \quad d = 10 \quad A = 78.5 \quad C = 10\pi$$

$$C = 36.7$$

$$\frac{\pi d}{\pi} = \frac{36.7}{\pi}$$

$$d = 11.7$$

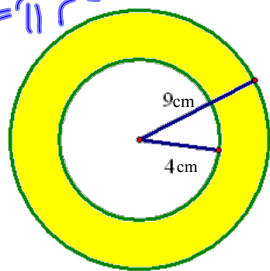
$$A = 78.5$$

$$\frac{\pi r^2}{\pi} = \frac{78.5}{\pi}$$

$$\sqrt{r^2} = \sqrt{25}$$

$$r = 5$$

$$A = \pi r^2$$

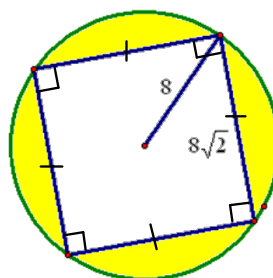


Find the area of the shaded region.

$$A_{\text{large}} - A_{\text{small}}$$

$$81\pi - 16\pi$$

$$65\pi \text{ cm}^2$$



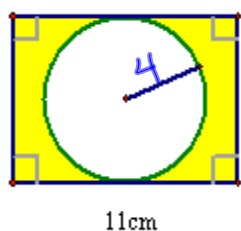
Find the area of the shaded region.

$$A_{\text{circle}} - A_{\text{sq}}$$

$$64\pi - (8\sqrt{2})^2$$

$$201.1 - 128$$

$$73.1 \text{ m}^2$$



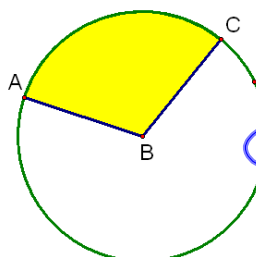
Find the area of the shaded region.

$$A_{\text{rect}} - A_{\text{circle}}$$

$$88 - 16\pi$$

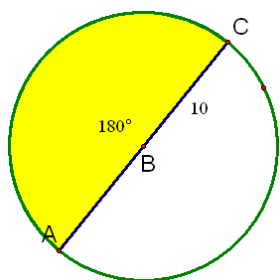
$$88 - 50.3$$

$$37.7 \text{ cm}^2$$



Central Angle--an angle whose vertex is the center of the circle.

Sector--region of the circle formed by two radii and a part of the circle.



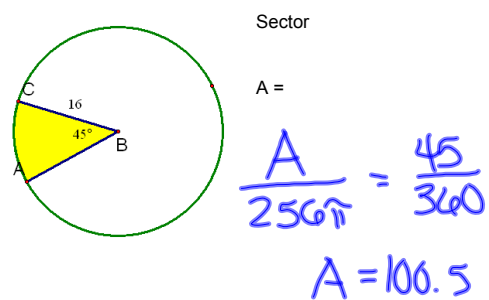
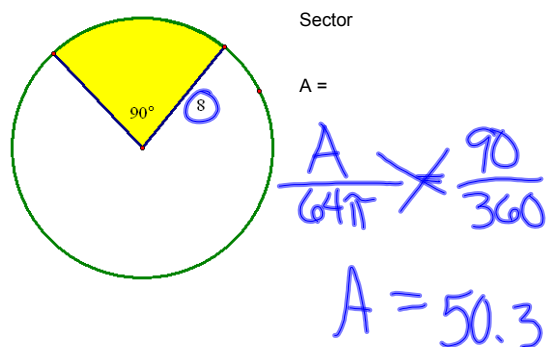
Find the area of the sector.

$$\frac{1}{2} 100\pi$$

$$50\pi \text{ m}^2$$

Area of a Sector

$$\frac{\text{Area of sector}}{\text{Area of entire circle}} = \frac{\text{Measure of Central Angle}}{\text{Measure of entire circle}}$$



HW

p456-458

10-12,15-20,33-35,38,39